Representing Rural Heritage: an educational, electronic and enhancement approach

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Representing rural heritage: an Educational, Electronic and Enhancement Approach

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Abstract

The essay describes how a heterogeneous set of data can become a planning tool for understanding and sharing information with public institutions and stakeholders; in particular the article refers to an integrated approach to surveying rural buildings heritage in the City of Volpiano (a small town close to Turin, Italy).

Keywords

Smart planning analyses, surveying integrated approach, rural landscape, drawing, UAVs, visual perception.

Introduction (U.C; G.R; U.Z.)

The research team has drawn up, in tune with the local institutions and other involved scholars, an 'atlas' of the Volpiano farmsteads,[1] that became a novel document to understand main features of rural landscape, but also to reflect on social and economic aspects.[2]

Volpiano is a small town outside Turin with a marked distribution of rural buildings which characterized the original settlements and influenced urban and social development. «One of the first steps to take to enhance a territory is not to clear its heritage»,[3] rediscover it nowdays allows a dynamic, forward-looking reinterprettation, including it in a modern approach from which it was excluded by recent planning policies devoted to innovation.

The cross-disciplinary nature of the research group[4] allow a compared approach that led to outcomes that are more interesting than the sum of the individual personal contributions.

With this background, this approach has multiple, direct and indirect values which refers to the educational level, the eletronic use of media and the enanchement planning processes of rural land. People involved (at every level and role) had the opportunity to discover aspects of a reality that every day they had under the eyes without necessarily see it, also learning to observe it with the use of not strictly new media (drawing, photography, notebook), and aiming at critical (not only systematic) scientific reppresentation, able to be newly supportive for understanding and possibly transforming the observed land and architecture.

1. Education: from passive to active observation (U.Z.)

Educating through drawing is a synthetic process between a passive and an active action, as it provides the acquisition of a methodological approach, the result of a mediation between theory and practice. In this context, the reference to education therefore arises from having offered

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[1] From 2013 the Municipality of Volpiano (Turin, Italy) has engaged a research group from the Polytechnic University of Turin in the process of observing and understanding the rural heritage still existing in its agricultural (and in some cases urban) landscape.

[2] Testù, Marchiolletti, Zich, Roccasalva, Coscia, Gron, Comollo, Borghini (2016)

[3] *Ibid*, p. 7.

[4] The profiles of the research group goes from drawing and survey, photography and *carnet*, urbanism and town planning.

These different approaches, points of view, different technologies and different cataloguing methods, all contributed to unveil parts of the Volpiano territory and farmsteads.

different ways of interacting from the usual points of view, thus creating different scenarios, and to suggest analytical tools, useful to identify new ones, thus leading to a personal growth, expression of innovation.[5]

Within the cited volume, having ranged from a territorial scale to an architectural one has raised the awareness of the readers to develop observational skills that allow them to leave their own fragmentation of reality to discover an engaging complexity.[6] The whole operation was intended as a reading of a single farm in order to understand the system and, in the same way, to better know the system in order to intervene on the single entity,[7] passing from the general to the particular and vice versa in a two-way relationship;[8] all of this trying to leave the pre-configured patterns, which looked at the farm as a closed object, being able to build new ones suited to the needs of specific prospects toward a future, open to their rediscovery.

During the process of data acquisition - later merged into a database in the form of datasheet - the educational value was becoming an integral part of the enhancement process going from 'Observing / Learning to Share / Educating'. Consequently the peculiarity of this methodological approach, which has proceeded by a collection of direct and indirect data ranging

from cartographic sources,[9] to oral traditions, integrating them with *in situ* surveys (graphic, photographic and instrumental), has made it possible to manage information with not homogeneous features and merge them within a storage system thus becoming capable of a cross-language mediation between sources and users, to create relationships between measured data evidence and the results of an emotional approach.

The flexibility to index objective and subjective data, while maintaining their specificity, therefore opened to the way to continuous implementation, helped avoiding the inherent impossibility, proper to each surveying operation, to ever consider completed a work of documentation.

It is certain that to understand a complex reality it is necessary to design the knowledge, starting from the selection of appropriate tools. Under this light, sharpening the tools of perception is part of the educational program proposed by our disciplinary approach, as drawers, who try to find out the visible structure to which to support the sometimes invisible information, the not only formal but critical outcome of a breakdown. Talking through images favored the construction of cross-language skills, suitable for sharing contents, useful in a recognizable path, outlined and not aimed at a specific audience, to accompanying you to see 'beyond the sight', build relationships among what is before your eyes and the prefigured model, find a design perspective and a possible socio-economic fallout. The choice made to 'permeate the private' and 'graphically' overcome the physical barriers of the 'walls', which close the rural living space, to engage and compartecipare spaces, ways, experiences through annotations and drawings, photographs and surveys, but also interviews and documents, those have made of the atlas a common, not strictly thematic good, to which the community has felt involved, more conscious and empowered towards their own urban landscape. The specific contribution of the drawing to the already outlined, cross-disciplinary research, creates materials useful to

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[5] Maura Striani, referring to the theories of von Foerster, says that «knowing does not mean, therefore, to observe the reality and reflect it as it is, discover relationships, laws, connections, gather information on it but it means, instead, to build possible interpretations of reality that are valid and reliable to move, at best, in the context of diverse and different experiential configurations we encounter in the course of the training processes in which we are involved. In this sense, the knowing subject becomes, therefore, from simple "discoverer", an "inventor" of reality, which takes many forms and faces depending on the interpretations that are given», Santoianni, Striano (2003). To complete the above, we can say that to browse through a rich text with images does not authorize to think that they will know how to draw as well as the displayed figures, as well as showing a drawing means not to teach how to make it and to narrate an experience does not necessarily determine that the same can be repeated independently. Drawing is a mediation between the mind and the hand, and if you can (in part) educate the hand by the repetition of a gesture, to form the mind is ...a complex path that involves a lot of complicity between the educator and those who want to grow.

[6] Mediating thus a cognitive approach with a post cognitive one. See Graf, Carstensen, Weinert, Shweder (1996).

[7] See also Porzilli (2016)

[8] See Husserl (1976)

[9] Similarly to what has been proposed by Chias Navarro, Abad (2016), the need to manage the complexity of the site led them to store on catalogative tabs, a wordgraphic mix compilation, of a Geofraphic Information System, where all the data acquired by a variety of sources and represented with drawings what emerged from the research.

understand the territory as perceived by the population, following the direction shown by Article 1 of the European Landscape Convention (Florence, 2000).

forget that it is such a personal experience that it is not delegable and is therefore too simplistic to think that the mere consultation of the book could be sufficient to a total empowerment.
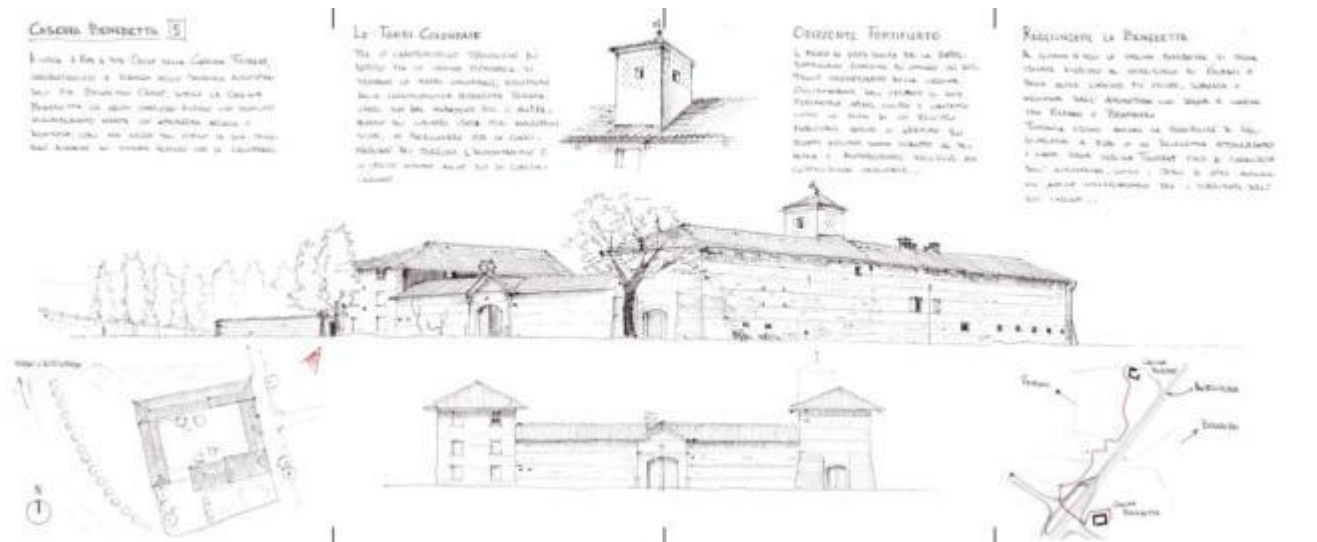

Fig. 1: The Benedetta farm in the sketchbook by Matteo Gallo (2014), in Testù et al. (2016).
Notes and sketches results of the observation, relate territorial elements and architectural details. The chosen perspective is that of the traveler.
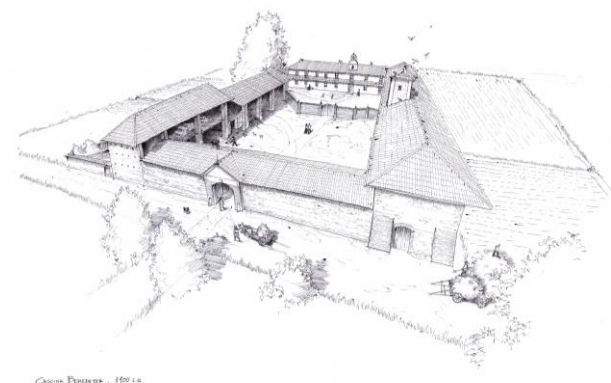

Fig. 2: The Benedetta farm in the sketchbook by Matteo Gallo (2014), in Testù et al. (2016).
The synthetic representation outcome of the redesign of a photograph from a drone, digitally processed. The drawing expresses the results from the research work describing a specific historical stage on the basis of directly and indirectly acquired information. Defined the purpose, the choice of the electronic eye was unnatural but able to give an easy to read overview.

Knowing the context through the drawing is an educational experience for participants because the physical execution of a graphic elaborate requires a critical selection of the represented items and the time required for this activity affects the perceptive tools. If it is true that you can share a drawing,[10] but we cannot

The search of routes through the farms of Volpiano is a cultural resource, and it educates to the designed vision. The process of knowledge (scientific, analytical, interpretative and divulgative) went further from a description of the current state of affairs (which for the reader is a form of passive observation) to start a literacy process that can create the basis for a new awareness of the architectural heritage in order to explore (between theory and practice, in an active observation dimension) through an educational process, direct and indirect, which combines the genesis and development of the rediscovered 'empowered rural system'.

2. Electronics: the carnet de voyage and the drone to tell a route between the countryside around Volpiano (U.C.)

The *carnet de voyage*[11] was chosen to narrate a route along the countryside of Volpiano and to study its rural architectural heritage, not separated from its territory and its history. This is because the carnet - but we are actually talking about the drawing itself - through the impressions, feelings and perceptions of the artist-observer (from ob-serve, literally 'to keep': the practice of those who, observing, make it their

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[10] To share is meant as showing it, discuss it, read it critically.

[11] Sketch diaries.

own), collected through walking and cycling and even long breaks extended in time, allowed a reading of the dynamic space of these architectures and their environment, be it whether urban or rural, in order to better understand the present - and perhaps the past - of these places and these particular architectures, that live in close contact with the agricultural and livestock activities, carried out (or that were) in the surrounding area.

The ground line is one of the 'horizons' on which (in the true sense of the word) this union between architecture and land is based, although it's not the only one that was perceived, as some others have been highlighted in the *carnet* (Fig. 3), actually coexisting with this basic one: a distant profile of an urban settlement, the strong line of the motorway or railway, modern and at the same time attenuated in the distance.

Those and other observations were noted on the sketchbook by the author. But one in particular we focused on as a working group: the strong perceptual distance, in the farms, between their outside, the 'walls', a defensive and alienating limit to the casual traveler, and their inside, the 'farmyard', particularly intimate and familiar. Two difficult to reconcile realities, which, at the same time, do naturally coexist.

This is the reason why it was designed a way to perceptually reconnect these two visions, separated both functionally and architectonically.
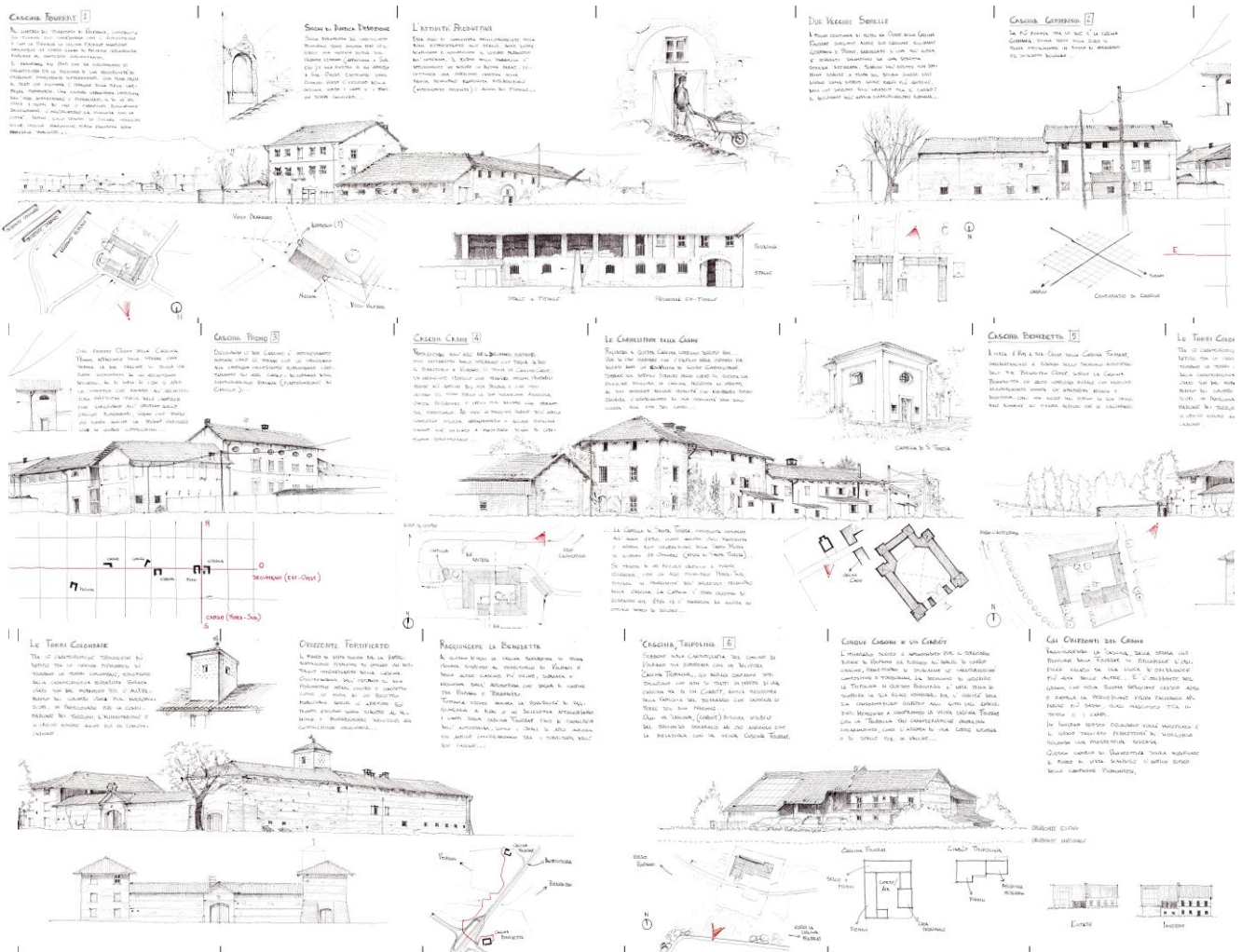

Fig. 3: Matteo Gallo (2014), the *carnet de voyage* splitted on three lines.

2.1 Changing the point of view

Well before the discovery/invention of the perspective theories, man has always felt the need to explain, tell, show the reality - or parts of it - by drawing.

For many centuries the artist - but also the architect - has been questioning, perhaps unconsciously, the human perception of what he was tracing on paper (or canvas, if painting), trying to recreate the reality (perhaps an imaginative one) that he wanted to tell, at the best of its ability, finally arriving to determine, theorize and increasingly use with greater mastery, the rules of perspective.[12]

«The architects, in fact, were especially fascinated by the impact force of perspective that could, with a single chart, show an entire building, illusively three-dimensional»[13] and also began to notice how, by modifying some of the technical elements used in this kind of representations, they could bend those rules to their different needs, increasing their expressive potential.

One of the elements that contributes to this 'perspective game', is the position of the point of view (the observer's location), the alteration of which greatly influences the quality of the representation, changing the perception of reality.

Let's observe, for example, a painted battle scene, represented in two classic pictorial forms (Figs. 4, 5): we can see that, in the first one, the point of view at a normal human height leads us to feel like we are in the middle of the action,

Fig. 4: Paolo Uccello, *The Battle of San Romano*, ca. 1456, Florence, Uffizi Gallery, 1135 P

present and involved in the fighting that takes place in front and around us.

Fig. 5: Luis-François Lejeune, *La Bataille des Pyramides, 21 juillet 1798*, 1806, Versailles, Musée du Château

By simply changing this parameter, getting high enough to embrace the battlefield, as in the second image, the scene's perception becomes much more detached, we may seek and observe the details of a single action, but it is the whole that is being proposed, almost a tactical visualization similar to the one that commanders on these occasions tried to physically reach, going to the top of elevated stations over the battlefield, to better direct the operations.

In this case, the emotional involvement is totally different, as well as the amplitude of the perceived space, and the details' level in the scene.

This gap can be speculated to be also due to the fact that it is a relatively unusual perspective
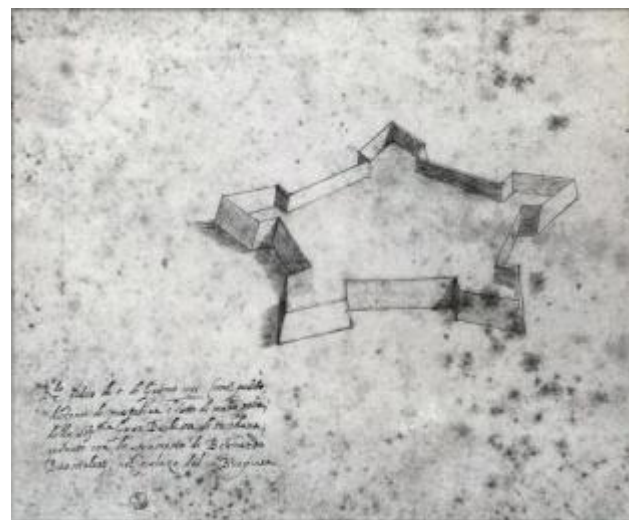
Fig. 6: Christina of Lorraine, *Perspective drawing of a fortress performed with the instrument of Buontalenti*, 1595, Florence, Prints and Drawings Department of the Uffizi, 2326

for our habits of perception, as it is often called 'bird's eye view',[14] which further emphasizes the

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[12] «[...] as early as the fourteenth century, and especially in Italy, the architectural drawings related to projects, intended, therefore, for approval and construction sites, always carry a hint of concessions to the 'perspective' or 'axonometry' to suggest the thickness, of the concavity or convexity», Di Teodoro (2015), p. 55.
[13] *Ibid*, p.57.

[14] «The bird's eye perspective is a representation from above, as in an aerial view, typical of the Nineteenth century Japanese prints.

emotional distance from the human, more usual point of view.

This kind of view has been often historically used to describe military emergencies[15] (Fig. 6) or to represent cities, especially because of the problem of high walls frequently surrounding them, which, by their defensive form and function, protected also from a normal human height observer (Fig. 7); nothing could do against the 'flying' Saints (Fig. 8) or the military engineer: raising the visual point expands the region that will be visible and any barrier, natural or not, can be overcome.

Fig. 8: _Measurement of the city walls_, particular of the paintings with the _Heavenly Jerusalem_, 1180 ca., Germany, Schwartzheindorf, Saints Mary and Clemente, western segment of the vault

This type of performance was very common among landscape painters, especially in the Nineteenth century,[16] some of which overlapped a first layer with human figures placed almost in a vertical, orthogonal projection, then showing the landscape behind them at a different angle, a different horizon, almost like it was a concave surface or a rising ground, at least with respect to the figures themselves (Fig. 9).

Fig. 7: Master Wenceslao, _the Month of December_, detail of the _Months_ cycle, 1400, Trento, Buonconsiglio Castle

Fig. 9: Jan Frans van Bloemen, _View from Monte Mario of the great bend of the Tiber with Ponte Milvio and the Via Flaminia_, late Seventeenth century

The perspective from below is a representation method used to paint figures and architectures viewed from underneath, making use of bold and very accentuated views», Ferrari (2006).

[15] «The need to represent space, measuring its dimensions, is a problem that arises in the Renaissance, in painting, with the invention of linear perspective, on the mathematical level, with the development of cartographic methods.

If this need is of purely intellectual value in the artistic circles, it is dictated by compelling practical reasons in the military ones, where the painters' perspective is revealed as one of the most extraordinary methods of measurement.

In the mathematical vision of the military engineers, dominated by deadly geometry of the new ballistic science, the pictures of the artist appear as the place of the measures of accessible objects from which the design of the real planimetric form of forts and territories can be traced», Camerota (2001), p. 207.

[16] «The search for the 'beautiful' of nature leads to a dilation, the enlargement of the 'geographical landscapes', aiming at the capture of the infinite, of the adventurous», Cianci (2008), p. 71.

Even today this technique is currently used in the display of land projects or for major infrastructure (Fig. 10).
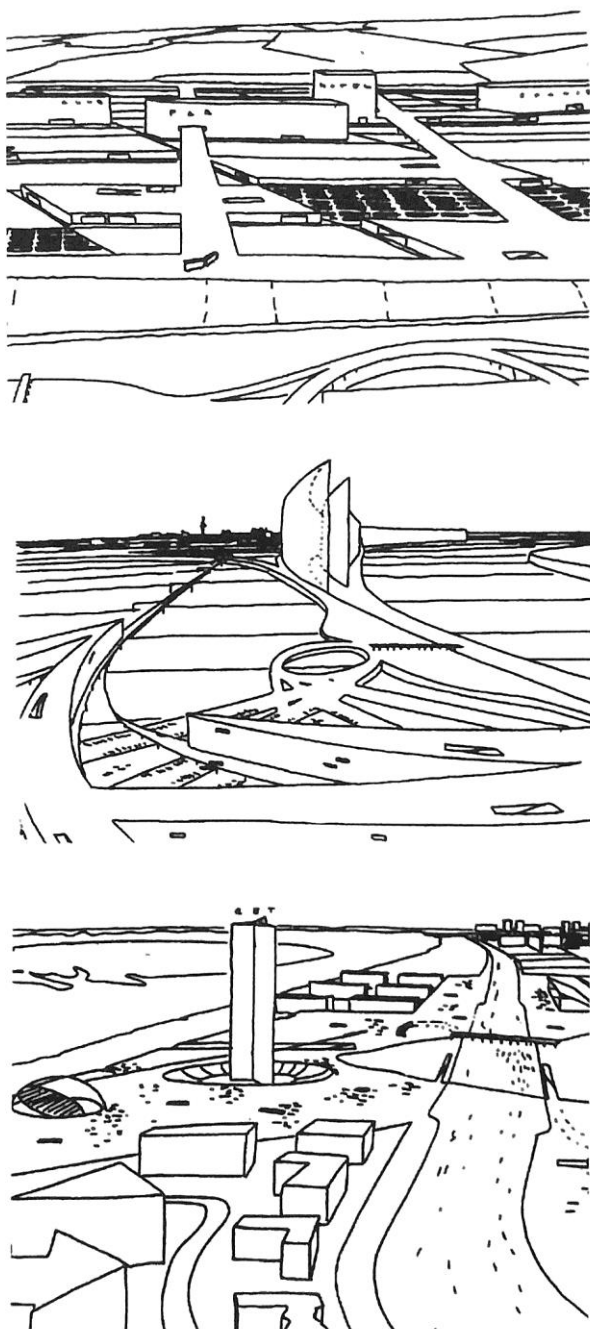

Fig. 10: Rem Koolhaas, *Transferia Project*, 1991

Others, especially the Baroque *quadraturisti*, experimented in the opposite direction: a view from the bottom up, speciality that immediately found its best destination on ceilings and vaults, because of the observer's position, naturally inclined to look upward, supporting the illusory game of these heavenly scenes (Fig. 11).

This general *excursus* shows us the transversal nature of this type of representation in history, and although it was often used in 'technical'

Fig. 11: Giambattista Tiepolo, *Glory of Spain*, 1762-1764, Madrid, Royal Palace, the Throne Room

drawings, it remains well understandable even to an audience without this kind of preparation.

From this considerations follows the choice made to use images provided by the camera lifted by a drone[17] (Figs. 12, 13).

Fig. 12: Aerial photograph of the Benedetta farm, Comollo (2014)

[17] See Comollo, "*Una differente prospettiva. La fotografia aerea per raccontare e coinvolgere*" (pp. 25-28) in Testù et al. (2016), for technical details. See also Eisenbeiss (2009).

Fig. 13: Point cloud obtained by automated photogrammetric process on the drone captured images, Comollo (2016)

These pictures were subsequently mediated, softened and undoubtedly enhanced by the drawing, so as to be able to show an 'unifying version' of the two aspects of the farms - the inside and the outside - and, with a game in which the drawing excels in ductility, even taken back in time,[18] so as to show a different, but perhaps even more interesting and explanatory version of these buildings.

Now, thinking back to the two representations of Figs. 1 and 2, we better understand the use made of the technological means that, while remaining completely invisible to the end user,[19] strongly contributes to the communication of these important rural realities.

3. Enhancement (G.R.)

Representation in planning can be a very complex issue in regard to the objectives of the depiction, the techniques and tools used, the data and contents we want to describe. The approach used to reppresent rural landscape of Volpiano has explored a new approach and particularly the role of scientific representation for planning. The process of observing and understanding the rural heritage started from overlaying many differ kind of maps on a common gis-base. Six similar typology of farmsteads were selected and surveyed with respect to their alignment to rural routes which are not yet disappeared despite the construction of new roads and main public infrastructures. The GIS overlapped maps from the past and present overview, the hand drawings and the drone photos become an Atlas for dialoguing and building a new "perception" of this

rural landscape. This perception is a broader representation than just a real depiction of the physical environment. In this regards the way we perceive is also the way we can understand, communicate and transform lands and its related planning policies.

This approach was defined "synesthetic"[20] as it aims at stimulating people's perception of spaces. A synesthetic representation is strictly connected to the studies of perception. It is possible to enumerate many research classification of people's perception, mainly relate to three research dimensions (Vernez, 1992): the image, the environment-behavioral and the spatial researches. Perception was examined through the experience occurring in the built environment (Sitte, 1889), it was observed through proxemic/ecologic studies or the environmental psychological studies.[21] Among all these dimension, a synesthetic approach is mostly focused on the visual component of space's perception[22] and how it can affect people's mind, behavior but, in particular, development policies.

As rural landscape can be differently perceived, it can consequently be improved in broader ways. The objective of this part of the paper argue how this integrated representation approach can enhance policies on rural environment by activating people and local economy.

All the representations, which were selected and put into the atlas of rural areas, has become a fundamental source for local planning regulation.[23] The atlas is nowadays a direct or indirect tool for small development initiatives which are both publicly or privately led. Moreover, local landscape Commettee[24] has the

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[18] Relying on images, verbal testimonies and coeval descriptive texts.

[19] No aerial pictures nor the photogrammetric model appear in the datasheets of the 'atlas'.

[20] Roccasalva "*La sinestesia: una figura retorica per leggere il territori*" in Testù et al. (2016).

[21] Several books deal with perception, see Hall (1966), Gibson (1979).

[22] Several disciplines deal with environmental studies as environmental geography, sociology, and psychology: Lynch, K. (1960). *The Image of the city*. Cambridge, MA: MIT Press; Cullen, G. (1976). *Il paesaggio urbano. Morfologia e progettazione*. Bologna, IT: Calderini. (Original work published 1962); Appleyard, D., Lynch, K. & Myer, J.R. (1964). *The view from the road*. Cambridge, MA: Joint Center for Urban Studies of the MIT and Harvard Universit; Hillier, B., & Hanson, J. (1970). *The social logic of space*. Cambridge, MA: Cambridge University Press.

[23] The Masterplan of the city of Volpiano has introduced the atlas of rural land which was developed with this study.

[24] A committee which is compulsory in Italy from 2004 and it is licensing bulding permit or simple land use transformations in the surrounding of a environmental

possibility to support their judgment according to more integrated knowledge. Particularrly the atlas is helping the Commette to:

• analyze coherent new functions which can turn the farmstead into a new life

• decide how to maintain or demolish original distributing scheme in accordance to the connection to the surrounding (entrance, exit to the agricultural land)

• distinguish the old, the new and the adjunct part of building system in order to maintain the original external image of the farmstead

• address the new developments of abandoned land close to the farmstead

One of the risk of this kind of integrated expert representation is that they can become outdated or unfamiliar to the local community. In this regards, the work of surveying the rural environment can be, for example, a continuous community based process where all stakeholders (practitioners, politicians, citizen) can take care of the incremental changes which often occur by the work of nature, local economy or lack of awareness.

For the future, this atlas can also encompass non scientific information and it must be open to public consultation, may be online. In this regards new web technology as crowdmapping will make possible to share data and information. This will give different users the possibility to consult, share, implement, add and also correct the atlas. It is possible to find many example of this strategy in other countries; from the original map of "crime spotting" in San Francisco to the re-use of the 1748 map of Nolli for a present use in the tourist business. Close to the topic rural land, another crowd map experiment was developed in order to make more accessible the stories, legend and environmental qualities of a valley in Piedmont. The so-called "GeoMa" project succeed in developing a web crowd map which is sharing and make visible in real time all geo data which is traceable from the local community.

In this way, an atals which is shared and co-uptodated can also become a process of empowerment[25] which lead to a more "competent community", giving the chance to build social cohesion about the most sensitive heritage of the area in order to protect and re-develop. A recent law opportunity[26] has challenged local communities to become the engine of possible environmental development. In this way the atlas can become a tool to community self determination and to publicly led fund procurement. All these kind of crowd maps are becoming more and more frequent for monitoring and cataloguing diffuse and rare set of data but in general it is a shift of paradigm for those land and heritage where visual information and representation are a valid tool for supporting enhancement policies and smart strategies. Atlas can detects visual qualities which are often neglected by planning policies and development practices. It can also help to simplify and understand main historic features, communicate to a broad audience of practitioners, improving the exploitation of environmental and architectural heritage.

Moreover, the regional and national policy which focus on enhancing natural, historic and cultural heritage are becoming a model for developing local green economy for the rural areas. Also Piedmont Region has declared that rural landscape development strategy is one of the main future planning objective.[27] EU stategy 2020 has dedicated funds on sustainable environmental actions for green economy. There are many examples of successful "green entrepreneurial" which developed thanks to a coherent exploitation of rural heritage. These actions put in contact all local systems (productive, touristic and economic systems) in order to make them a circular process which can be mutually fed. One of the task of the analytical approach of the atlas could be to foresee new economic opportunities and map the planning strategies for the rural areas. In this regard the research experience described in this paper is meant to be an exploration of a more comprehensive system to understand and share the rural realm and set up enhancing policies which tend to renovate and engage the interest of local economy.

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restricted areas. Roccasalva is president of Volpiano Landscape Commette

[25] See Zimmerman (2000) *Empowement Theory. Psychological, Organizational and Community Levels of Analysis.* In J. Rappaport, & E. Seidman, (Ed.), pp 43–63.

[26] It is called "Art Bonus" law. It gives the chance to a community to candidate historic buildings to public donations. Part of the donations can also have fiscal benefit.

[27] It was reported in the main session of IFLA 2016 Tasting the landscape. International Federation of Landscape Architects (20-22 april 2016 Turin).

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